

Claims

This listing of claims replaces all prior versions of claims previously presented:

1- 14 – Previously canceled

15. (Currently Amended): A real time PCR instrument comprising:

- an excitation unit comprising:
 - at least 1 light source capable of emitting light toward a reaction vessel containing fluorescent compounds,
 - a lightpipe being arranged for receiving light from the reaction vessel and capable of distributing homogeneously said light ~~for transmission to~~ into optical fiber bundles, wherein the light does not pass through a wavelength excluding device prior to being distributed into said optical fiber bundles,
- a detection unit comprising at least 5 separate fluorescent detector entities, each of said detector entities having a central detection wavelength, said wavelengths being distinct from each other by at least 25 nm,
- a plurality of at least 5 optical fiber bundles, each said bundle being arranged for receiving homogeneously distributed light from the lightpipe, and transmitting said light to said fluorescent detector entities,
- means for heating and cooling, and
- multiple reaction vessels for containing a reaction mixture,
~~wherein said plurality of detector entities is capable of simultaneously detecting maximum fluorescence emission of at least five different fluorescent compounds, and~~
wherein the excitation and detection units are located in separate housings.

16. (Previously Presented): A real time PCR instrument according to claim 15 comprising one light source.

17. (Previously Presented): An instrument according to claim 15, wherein said central detection wavelengths are selected from a group of range of wavelengths, said group consisting of 520-540 nm, 545-565 nm, 570-590 nm, 600-620 nm, 630-650 nm, 660-680 nm, and 700-720 nm.